REMARKS

Claims 1 and 7 have been amended.

Claims 1-4 and 7 were rejected under 35 U.S.C. § 103(a) as unpatenable over Taniguchi U.S. Patent No. 5,578,823 in view of Kundmann et al. U.S. Patent No. 5,798,524.

The Examiner states:

> 3. Taniguchi teaches an electron beam apparatus (i.e. a transmission electron microscope) having an illumination optical system (3); imaging optical system (5); and an electron analyzer (6).
> 4. Taniguchi teaches the acceleration voltage is varried to shift the detected energy (see for example col. 3, lines 42-49; col. 7, lines 41-51). Taniguchi teaches also changing/regulating the signal to the lenses (see col. 3, line 64-col. 4, line 2).
> 5. Taniguchi teach multiplying the signal by the energy shift value (col. 8, lines 19-35).
> 6. Taniguchi does not teach a deflection means and changing the signal to the deflection means in response to the energy shift.
> 7. However, Kundmann et al teach the desirability of a deflection means in a transmission electron microscope (col. 1, lines 5-50). In Kundmann et al, the beam is deflected/moved via (106) to improve automatic correctional procedure.
> 8. It would have been obvious to an ordinary artisan at the time of the invention to combine Taniguchi and Kundmann et al since Kundmann et al teach automation and increased precision (see col. 4, lines 44-59).

Reconsideration is respectfully requested.

Taniguchi does not teach "correcting" the signals to the lenses and deflecting means, let alone doing so based upon the energy shift value.

As explained in the paragraph bridging columns 3 and 4 of Taniguchi, the excitation current for an irradiating electron lens system is varied to change "image intensity." The meaning of image intensity is clarified at Column 7, lines 11-20. Image intensity regulation is "also referred to as amplitude regulation." In a word, beam current is regulated. While Taniguchi provides no explanation how beam current is regulated by

varying lens current, the simplest method is to defocus the beam approaching a beam-shaping aperture. This, of course, has nothing to do with correcting for focus and position.

As acknowledged in the Applicant's specification, prior attempts have been made to correct the lens current signals for focus and position as the accelerating voltage is changed. Those attempts have changed the lens current based upon the change in acceleration voltage. See paragraph [0026] of Applicant's specification. This, however, is not adequate. See paragraphs [0030] and [0055] of Applicant's specification.

The Applicant has discovered that by correcting lens current based upon the energy shift value produced by the change in the acceleration voltage, adequate correction is possible.

The independent claims have been amended to emphasize that the "correction" is "for focus and position." This, of course, is not beam current.

Since no reference suggests correcting the lens and deflections means for focus and position based upon the energy shift value, all of the claims are nonobvious in view of the prior art.

With reference to the Kundmann et al. patent, it discloses an illumination deflector system 106 (scan coils) at Column 5, line 37. Nothing more is said about the scanning coils. Nowhere is it suggested that the current to the scanning coils needs to be varied with change in beam acceleration voltage, let alone based upon energy shift values. Assuming, for the sake of argument, motivation or suggestion to combine Taniguchi and Kundmann et al., no combination would result in Applicant's claimed invention.

In view of the foregoing amendments and remarks, it is urged this case is now in condition for allowance.

Respectfully submitted,

THE WEBB LAW FIRM

By _____

David C. Hanson, Reg. No. 23,024
Attorney for Applicant
700 Koppers Building
436 Seventh Avenue
Pittsburgh, PA 15219-1845
Telephone: 412-471-8815
Facsimile: 412-471-4094
E-Mail: webblaw@webblaw.com